Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters	)	WT Docket No. 10-4

REPLY COMMENTS OF AT&T SERVICES, INC.

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I. INTRODUCTION AND SUMMARY

AT&T Services, Inc., on behalf of its affiliates, ("AT&T") hereby submits these reply comments in response to the *Second Further Notice of Proposed Rulemaking* ("*Second FNPRM*") seeking comment on proposed alterations to the Commission's rules governing Consumer Signal Boosters.[1] The opening round of comments makes clear that while there are narrowly-targeted rule changes the Commission can make to facilitate the use of Consumer Signal Boosters, these changes must not come at the cost of interference to wireless networks. In particular, the Commission should not permit the operation of Consumer Signal Boosters in 2.3 GHz Wireless Communications Service ("WCS") spectrum, as there is a significant risk of interference to commercial wireless and other wireless operations.

The challenges of the 2.3 GHz band represent an illustration of a broader principle – that the Commission should not authorize the operation of Consumer Signal Boosters in additional

[1] *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Second Report and Order and Second Further Notice of Proposed Rulemaking, FCC 18-35 (2018) ("*Second FNPRM*").

spectrum bands without soliciting and reviewing feedback of interested parties. In particular, the Commission should reject suggestions that the consent of relevant licensees not be a condition precedent to the introduction of Consumer Signal Boosters in new bands. The Commission should also make clear that a notice and comment rulemaking will take place prior to authorizing new bands for Consumer Signal Booster use, and it should reject calls to issue a blanket authorization for all CMRS bands without considering the interference environment specific to each band.

Finally, the record contains widespread support for a one-step, centralized registration process for wideband Consumer Signal Boosters. A centralized database will promote compliance with the Commission's registration requirements and make the registration process less burdensome for consumers. The Commission is the best choice to administer this registration database, as the Commission is uniquely positioned to leverage existing technical resources and make clear to consumers the importance of booster registration.

II. THE RECORD MAKES CLEAR THAT THE COMMISSION SHOULD NOT PERMIT OPERATION OF CONSUMER SIGNAL BOOSTERS IN THE WCS BAND.

In its opening comments, AT&T expressed concern with the authorization of Consumer Signal Boosters in 2.3 GHz WCS spectrum due to the unique interference environment in this spectrum.[2] Similarly, other stakeholders operating in the 2.3 GHz band have demonstrated how the operation of Consumer Signal Boosters in WCS spectrum would destroy a careful interference balance that has taken years to establish. For this reason, AT&T cannot grant its consent to the operation of Consumer Signal Boosters in WCS spectrum.

[2] Comments of AT&T Services, Inc., WT Docket No. 10-4 (May 18, 2018) ("AT&T Comments").

As AT&T explained in its opening comments, the WCS band is immediately adjacent to satellite radio and aeronautical telemetry uses. To prevent interference to adjacent-band operations, WCS licensees must operate subject to strict technical parameters, and mobile operation has been prohibited altogether in the C and D Blocks.[3] WCS licensees must also coordinate the deployment of all base and fixed stations with Sirius XM, AMT licensees, and NASA.[4] Sirius XM notes that this "has created unavoidable technical challenges for Sirius XM and AT&T"[5] and that both companies "are engaged in ongoing, painstaking efforts in an attempt to refine and supplement the Commission's WCS regulatory framework through coordination arrangements and other cooperative activities."[6] Meanwhile, the Aerospace and Flight Test Radio Coordinating Council, Inc. ("AFTRCC") notes that coexistence has required coordination of "tens of thousands of WCS base stations using [AFTRCC's] proprietary software in collaboration with AT&T."[7]

AT&T supports the conclusions of both Sirius XM and AFTRCC that the introduction of boosters in WCS spectrum likely would undermine operations in adjacent spectrum. As Sirius XM warns, "it would be extremely difficult, if not impossible, for the Commission to tighten the technical parameters within which unlicensed Consumer Signal Boosters must operate after

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3 *Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band*, Order on Reconsideration, FCC 12-130 (2012).

4 47 C.F.R. § 27.73.

5 Comments of Sirius XM Radio Inc., WT Docket No. 10-4, at 2 (May 18, 2018) ("Sirius XM Comments").

6 *Id.*

7 Comments of the Aerospace and Flight Test Radio Coordinating Council, Inc., WT Docket No. 10-4, at 2-3 (May 18, 2018) ("AFTRCC Comments").

those boosters are deployed."[8] Essentially, it explains, to ensure non-interfering booster operation the Commission would need to require WCS licensees to operate under even more restricted technical parameters, "a result that would inhibit efficient WCS and SDARS operations and ultimately harm wireless broadband customers . . . as well as Sirius XM's satellite radio service."[9] Meanwhile, AFTRCC submits that it "is unaware of any effective means of coordinating consumer boosters to ensure flight test operations in the adjacent band would not experience harmful interference."[10]

AT&T agrees with T-Mobile that "[t]he Commission should clarify . . . that wireless carriers may withhold consent for the deployment of boosters on new spectrum bands where there are unique interference issues."[11] The submissions of AT&T, Sirius XM, and AFTRCC make clear that this is the case in WCS spectrum. AT&T is currently the largest WCS licensee, holding 167 of 171 active WCS licenses and all WCS licenses covering the land area of the United States.[12] AT&T is therefore uniquely positioned to either grant or withhold consent to operation of Consumer Signal Boosters in WCS, and to provide evidence of the "unique interference issues" cited by T-Mobile. For the reasons outlined above, AT&T hereby submits

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8 Sirius XM Comments at 3.

9 *Id.*

10 AFTRCC Comments at 3.

11 Comments of T-Mobile USA, Inc., WT Docket No. 10-4, at 2 (May 18, 2018) ("T-Mobile Comments").

12 The four WCS licenses not held by AT&T are held by RigNet SatCom, Inc. and cover the Gulf of Mexico.

that it does *not* grant its consent to the operation of Consumer Signal Boosters in the WCS band.[13]

III. ANY AUTHORIZATION OF NEW SPECTRUM BANDS FOR CONSUMER SIGNAL BOOSTER USE SHOULD COME ONLY AFTER A NOTICE AND COMMENT RULEMAKING AND A GRANT OF CONSENT FROM RELEVANT LICENSEES.

A. Licensee Consent is a Critical Step in the Authorization of Additional Spectrum for Consumer Signal Boosters.

In the *Second FNPRM,* the Commission correctly states that a key consideration when evaluating additional bands for Consumer Signal Booster operation is "whether a meaningful number of the licensees in the band will consent to Consumer Signal Booster Operation."[14] Other commenters agree, highlighting the importance of a collaborative process and licensee involvement. For this reason, the Commission should reject calls to circumvent the question of licensee consent and authorize Consumer Signal Boosters in additional bands regardless of whether licensees have consented.

As the Commission notes, "the consent of the potentially affected licensees is key to the operation of the rules."[15] This consent helps ensure that signal boosters do not cause harmful interference, and facilitates the resolution of such interference if it does occur.[16] And, as T-

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[13] AT&T also notes that it currently has no plans to offer consumer devices that operate only in WCS spectrum, and that the vast majority of its consumer devices operate on more than one CMRS band. For this reason, AT&T does not envision any scenario where a consumer would be reliant on a signal booster that incorporates the WCS band.

[14] *Second FNPRM* at ¶ 21.

[15] *Id.*

[16] Comments of Verizon, WT Docket No. 10-4, at 9 (May 18, 2018) ("Verizon Comments").

Mobile notes, it is critical "that wireless carriers may withhold consent where there are legitimate concerns over the impact of the boosters."[17] Indeed, when it adopted its initial rules for Consumer Signal Boosters, the Commission clarified that operation of a Consumer Signal Booster without the consent of the relevant licensee would be a violation of Section 301 of the Communications Act,[18] which requires a valid FCC license to operate a radio frequency transmitting device.[19] In other words, licensee consent is not something the Commission can require or not require on a whim – it is fundamental to the successful operation of the regulatory framework for Consumer Signal Boosters.

Certain commenters in this proceeding now seek to fundamentally alter the Commission's regulatory framework by eliminating licensee consent as a prerequisite to the authorization of Consumer Signal Boosters in particular bands.[20] Even more troubling, Surecall requests that the Commission adopt a blanket authorization for the use of Consumer Signal Boosters in all CMRS bands while making no mention of licensee consent.[21] Contrary to Wilson's assertion, it is indeed "material" whether licensees will consent to the use of Consumer

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17 T-Mobile Comments at 2.

18 *Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters*, Report and Order, 28 FCC Rcd 1663, n. 71 (2013).

19 47 U.S.C. § 301.

20 Comments of the Enterprise Wireless Alliance, WT Docket No. 10-4, at 4 (May 18, 2018) ("EWA Comments"); Comments of Wilson Electronics, LLC, WT Docket No. 10-4, at 3 (May 18, 2018) ("Wilson Comments").

21 Comments of Surecall, WT Docket No. 10-4, at 9 (May 18, 2018) ("Surecall Comments").

Signal Boosters in their licensed spectrum.[22] Wilson and the Enterprise Wireless Alliance suggest that if U.S. wireless companies do not consent to have Consumer Signal Boosters operate in certain licensed frequencies, booster manufacturers simply will have no incentive to develop boosters that operate in those frequencies.[23] However, it is not clear what degree of licensee consent would be necessary for a booster manufacturer to have an incentive to develop a booster for a particular band. Would one licensee's consent be sufficient even if all the others opposed it? Because wideband boosters cannot differentiate between consenting and non-consenting networks, a non-consenting licensee could not prevent a booster from operating in its spectrum once said booster was "in the wild." Further, even if all U.S. wireless licensees withhold consent to the operation of a Consumer Signal Booster in a particular frequency band, a manufacturer may nonetheless have a financial incentive to develop a booster for use in that band if such use is permitted in countries other than the U.S. And, if that is the case, it will be difficult to control the purchase or use of such boosters by U.S. consumers, as well as to enforce the Commission's rules.

B. The Commission Should Only Authorize Additional Frequencies Through Notice-and-Comment Rulemaking.

When considering whether to authorize the operation of Consumer Signal Boosters in a new frequency band, the Commission should use its notice and comment rulemaking procedures to fully evaluate whether expanding Consumer Signal Boosters to a new spectrum band could be done on a non-interference basis. AT&T agrees with Verizon that "[f]ailure to offer the

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22 Wilson Comments at 3 (stating that "it is immaterial whether consumers or other non-licensees will have any use for CSBs, or whether licensees will consent to such use.").

23 *Id.* *See also* EWA Comments at 4.

opportunity to consider fully whether the authorized uses in a new spectrum band are compatible with the use of signal boosters and the existing [Network Protection Standard] could result in harmful interference into authorized users in the proposed band.[24]

Several parties have asked that the Commission authorize consumer signal boosters in all CMRS bands, current and future, or in specific spectrum bands such as the 3.5 GHz band, the C-Band, the 4.9 GHz band, and higher-frequency bands.[25] None of these bands have been licensed yet, and in many of them the Commission has not even finalized or even proposed service rules. It is entirely premature for the Commission to authorize Consumer Signal Booster use in these frequencies. Indeed, the experience of the WCS spectrum is a clear illustration of why the Commission should not put the cart before the horse. The interference environment in the 2.3 GHz band became so problematic that major revisions were made to the WCS service rules *fifteen years* after the WCS auction. AT&T does not believe that interested parties or the Commission could make a truly informed decision regarding the technical feasibility of booster operation in bands for which service rules have not been finalized. Indeed, Verizon correctly notes that the Network Protection Standard would need to be modified to adequately protect operations in higher-frequency bands.[26] Booster manufacturers appear to be suggesting an end-run around the licensee consent requirement by asking the Commission to make conclusions about the technical viability of booster operation in bands where licensees have yet to be identified.

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24 Verizon Comments at 3.

25 EWA Comments at 4; Surecall Comments at 9.

26 Verizon Comments at 4.

Instead, the Commission should proceed with the adoption of service rules for and auctioning of licenses in new frequency bands before considering the question of whether consumer signal booster operation should be authorized. Only at that stage should the Commission conduct a notice-and-comment rulemaking on the question of signal boosters. In so doing, the Commission will ensure that stakeholders are properly identified and given a forum to provide comment and, critically, consent (or lack thereof).

IV. THE COMMISSION SHOULD ADOPT AND CREATE A ONE-STEP, CENTRALIZED REGISTRATION PROCESS FOR WIDEBAND CONSUMER SIGNAL BOOSTERS.

To promote responsible, compliant operation of wideband Consumer Signal Boosters, the Commission should establish a one-step, centralized registration process for users of these devices. Commenters agree with AT&T that a centralized process will minimize burdens for consumers, promote compliance, and most efficiently help resolve interference challenges. The Commission has already developed many of the resources needed to support this database and is the most appropriate choice to host it.

AT&T believes that a centralized database is preferable because it will promote compliance with registration requirements and enable wireless carriers to determine with accuracy which registered boosters may be impacting their networks. As Verizon explains, "[a] central registry would allow for one-time registration of a Wideband Booster, without the need for the user to research which operators to register with and then register with multiple operators."[27] Under this system, "all operators will have a single entity to register any potential

[27] Verizon Comments at 12. *See also* Comments of the Ad Hoc Telecommunications Users Committee, WT Docket No. 10-4, at 5 (May 18, 2018 ("Ad Hoc Comments") ("Burdensome registration requirements impose unnecessary barriers to the effective and efficient deployment of these devices and increase the likelihood of non-compliance, jeopardizing the ability of

Wideband or Mobile Consumer Signal Booster and carriers could access the data if and when interference occurs."[28] This would greatly enhance interference mitigation because a wireless carrier "would . . . have a known source to search for Wideband Boosters that may be behaving badly on its network – even if the user would never have registered the booster on that provider's network."[29]

AT&T believes that the centralized database will function most efficiently if the Commission hosts and maintains it. This is because the Commission already provides a registration portal for Class B signal boosters,[30] and already possesses data on which licenses hold which CMRS spectrum in which geographic areas through the Universal Licensing System.[31] Furthermore, ULS is continually updated because it is the portal parties use to file applications to assign and/or transfer spectrum licenses and obtain new licenses. Any other administrator would be required to develop these capabilities from scratch, and to continually update a database of which entities hold licenses in which spectrum. Because the Commission can readily leverage existing resources, they are the proper choice to host the centralized registration system.[32] In addition, having the Commission serve as the registration database

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wireless licensees to address quickly any interference issues in the unlikely event they might arise from the operation of a Multiband Consumer Signal Booster.").

28 Comments of CTIA, WT Docket No. 10-4, at 10 (May 18, 2018) ("CTIA Comments").

29 Verizon Comments at 12.

30 Part 90 Class B Signal Booster Registration & Discovery, *at* https://signalboosters.fcc.gov/signal-boosters/.

31 *See* Universal Licensing System, *at* http://wireless.fcc.gov/uls.

32 Alternatively, the Commission should require that signal booster manufacturers develop, implement, and fund such a database. Because the manufacturers of Consumer Signal Boosters receive the direct financial benefit of booster sales, they are the primary beneficiaries of any

administrator will emphasize to purchasers of wideband Consumer Signal Boosters how important the registration process is, and how it is fundamentally different from the registration process for other consumer products that consumers have become accustomed to.

V. CONCLUSION

For the foregoing reasons, AT&T respectfully requests that the Commission decline to authorize Consumer Signal Boosters in the WCS band, only consider additional spectrum bands through notice and comment rulemaking proceedings, and host a centralized database for the registration of wideband Consumer Signal Boosters. By taking these steps, the Commission will enable more widespread use of signal boosters by consumers without causing harmful interference to wireless networks.

Respectfully Submitted,

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policy that facilitates widespread booster operation. Furthermore, they would be in the best position to validate certain information in the database, such as product model and serial numbers.